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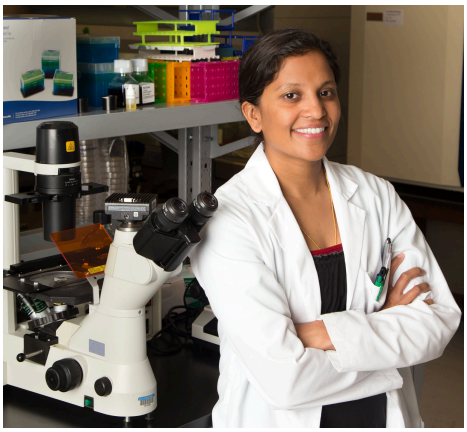

Elizabeth Vargis, PhD

Assistant Professor

Department of Biological Engineering

Utah State University

Seminar Title: "Understanding and Detecting Disease using Tissue Engineering and Biophotonics"

When: Thursday, November 3, 2016

Where: Merrill-Cazier Libary room 154

Time: 12:00 pm to 1:00 pm

Abstract:

The goal of my research group is to develop and investigate methods and tools to understand and detect diseases. We currently have 3 research thrusts: modeling subretinal tissue, simulating microgravity and radiative effects on skeletal muscle, and separating and identifying bacteria. We use micropatterning and 2D cultures with spider silk to model normal and diseased layers of the subretina. For our muscle research, we are currently using a rotating cell culture system and Cesium disks to replicate the conditions during spaceflight. To identify mycobacterial strands, we are combining dielectrophoresis with Raman spectroscopy for fast and accurate detection. In each of these projects, we asses a wide variety of properties that are important to disease or detection, such as growth factor expression, permeability, double stranded DNA breaks, and classification accuracy. Each of these projects and their results will be discussed in detail.

Lunch will be provided